Accession number :02A0579745
Title: Waste paper recycling.
Author:IRINATSU YUICHI(Kao Corp.)
Journal Title: Japan TAPPI Journal
Journal Code:G0115A
ISSN:0022-815X
VOL.56;**NO.**7;**PAGE.**954-962(2002)
Figure&Table&Reference:FIG.11, TBL.2, REF.5
Pub. Country: Japan
Language: Japanese, tranclated into English

Abstract:

Pulp and paper industry is aiming to raise the percentage of waste paper recycling to 60% by 2005 and makes efforts to reach this target. Under these circumstances, developed deinking technology is severely required. The deinking is indeed one of the process industries and is mainly consisted of ink releasing and ink rejecting. To control the ink particle size in each process is very important in order to obtain the good deinked pulp. For example, in the ink rejecting process, more than 95% of larger ink particles than 4 um is easily rejected by the flotation cells. This means smaller ink particles than 4 um are hardly rejected. Residual small inks make the deinked pulp grayer and result in poor printability. Coagulation of the small ink particles decides the deinkability in flotation. On the other hand, ink releasing relates to the penetration of the chemistry into the waste papers. Therefore, the phenomena in each deinking process can be understood by surface science and the deinking agent controls these phenomena. To achieve the above-mentioned target, lower grade waste papers, such as old magazines, which have not been used as a furnish will be deinked and for these waste paper deinking, developed deinking agents which have better ink releasing and sticky removing abilities will be needed. Based on surface science, we have developed the new deinking agent whose ink releasing ability is improved 20%. The special surfactant has been also developed to reduce the sticky. By using this surfactant, the sticky is removed 1.2 times as much as the conventional deinking agent. A deinking agent has been thought as a ink removing agent. From now on, concerning the pulp quality as a furnish, we are going to continue to develop the deinking agent as a pulp recycling agent to produce the better deinked pulp. (author abst.)

Glass Recycling
Analysis of energy footprints associated with recycling of glass and plastic—case studies for industrial ecology

V. Krivtsov , P. A. Wäger , P. Dacombe , P. W. Gilgen , S. Heaven, L. M. Hilty and C. J. Banks

[a] Department of Civil & Environmental Engineering, University of Southampton, Highfield, Southampton SO17 1BJ, UK

[b] Swiss Federal Laboratories for Materials Testing and Research (EMPA), Lerchenfeldstrasse 5, CH-9014, St. Gallen, Switzerland

Abstract

Roundput [Int. J. Sustainable Dev. World Ecol. 8 (2001) 29] is one of the most important principles of the development of both natural and industrial ecosystems, and is especially important for analysis of an ecosystem’s dynamics and overall functioning, as it is related to an extent to which energy and matter are recycled and used in a cascade-type operation. Here we argue, using two modelling case studies from the UK and Switzerland, that increasing recycling rates for plastic and glass would improve the energy budget of waste management programmes, and, therefore, benefit the corresponding industrial ecosystems. In the first case study we show that the major source of energy savings from glass recycling is through increased use of cullet in glass manufacture (5.4% reduction in total energy consumption with 100% glass recycling when compared to the present-day situation). In terms of energy consumption, recycling is the preferred waste management option, even if a large proportion of the recycled glass is diverted for use as aggregates. Further energy savings could be achieved by introduction of a city-wide kerbside collection scheme, which would result in an estimated maximum reduction (100% recycling rate) of 7.6% in energy consumption for processing of the Southampton household glass wastes.

No need for the second case.

In the second case study we compare the situation in which all wastes are burnt at a MSWI plant with two scenarios assuming that 8.1% of the

plastic is diverted into a cement kiln (mixed plastics; scenario 1) or a mechanical recycling plant (polyethylene, polypropylene, polystyrene; scenario 2). The resulting net primary energy consumption values for both scenario 1 (5.85E8 MJ or 60% relative to the reference scenario) and 2 (7.46E8 MJ or 76.6% relative to the reference scenario) use less primary energy than the reference scenario (9.74E8 MJ). This means that, from the point of view of resource consumption, the diversion of plastics waste away from the MSWI plant has a beneficial effect. Therefore, the increased recycling of glass and plastic would benefit the industrial ecosystems in terms of energy savings. This is similar to the patterns observed in most natural ecosystems, and a careful consideration of this similarity within a framework of industrial ecology should help to reduce the conflict between the two systems.